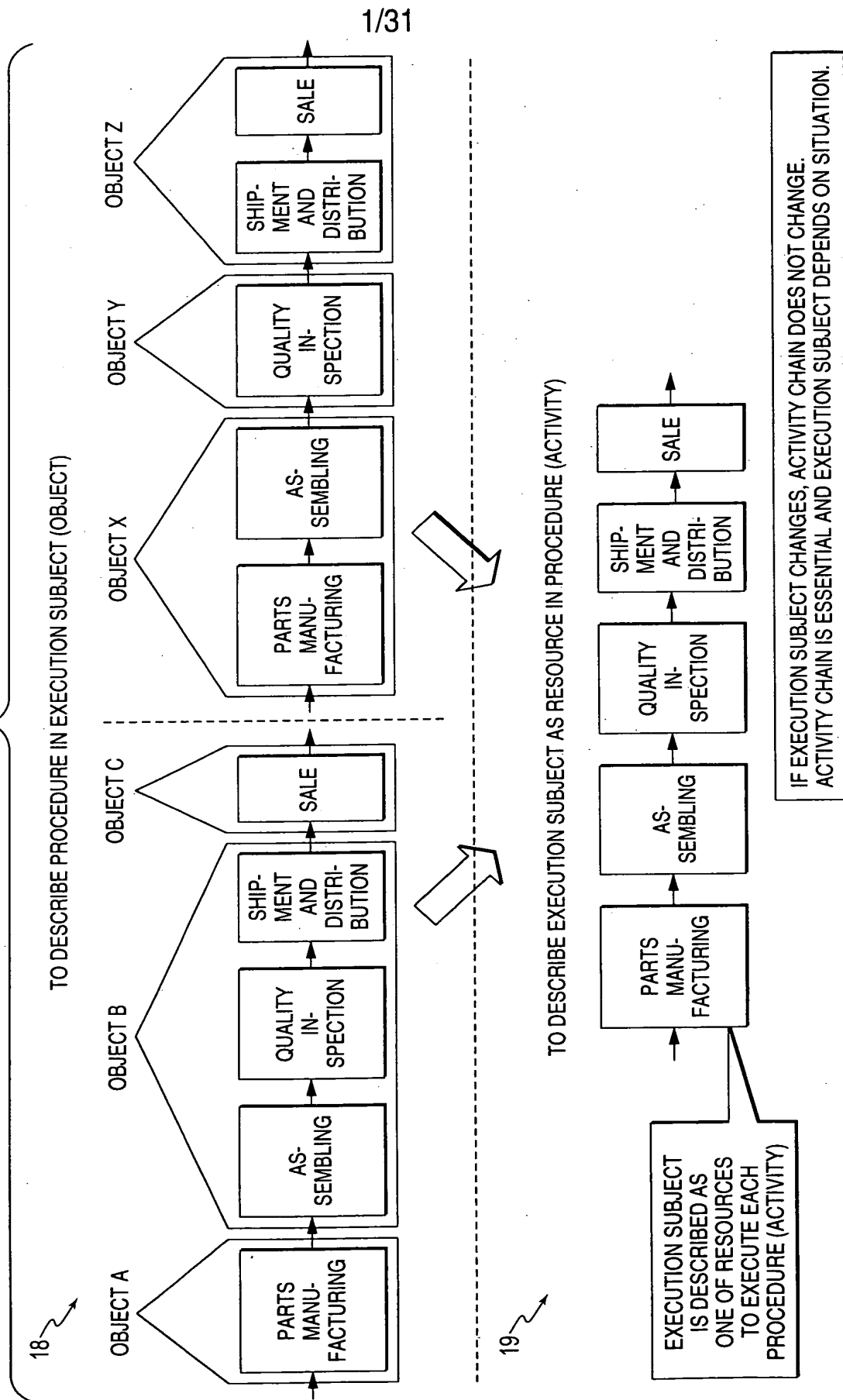
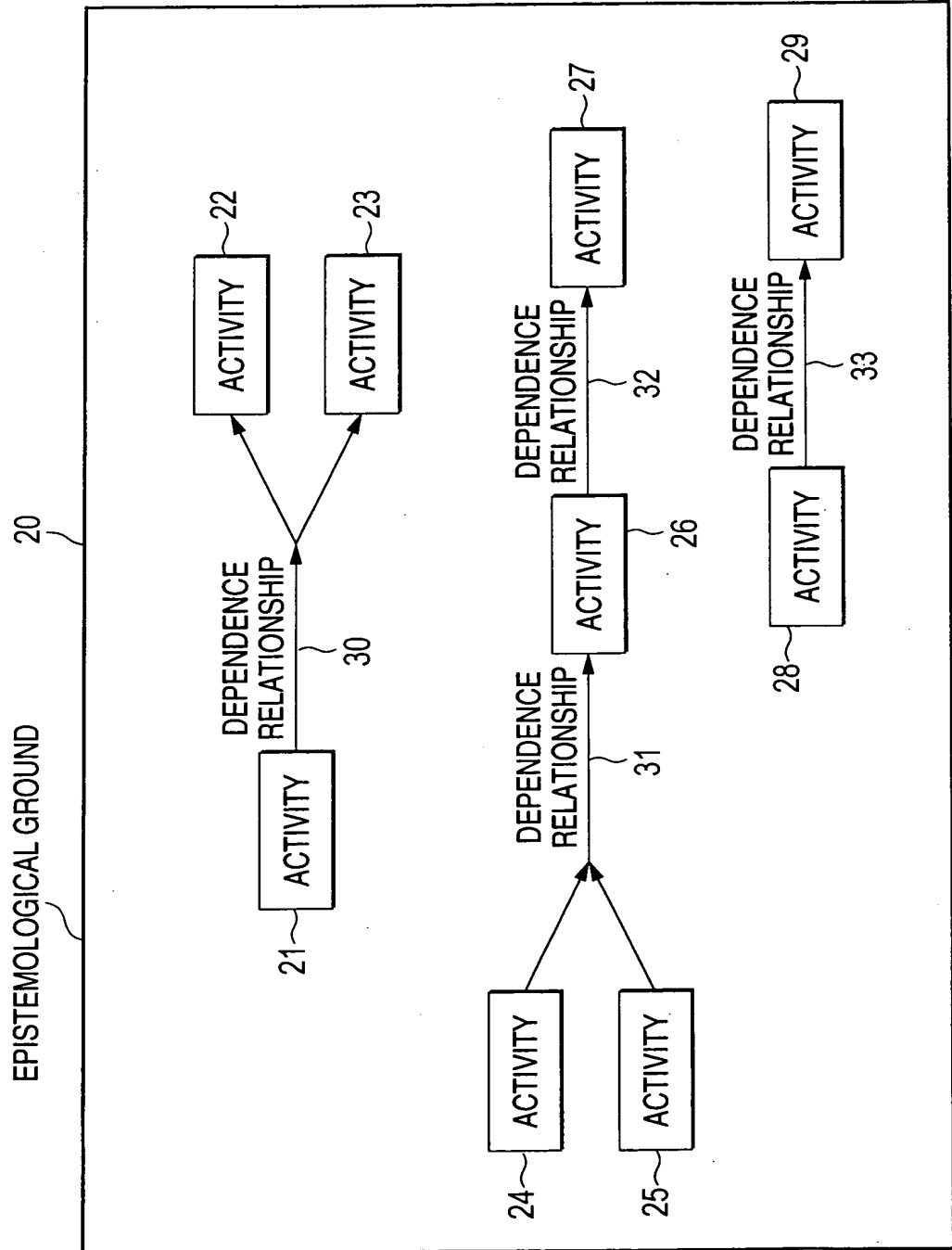


FIG. 1



2/31

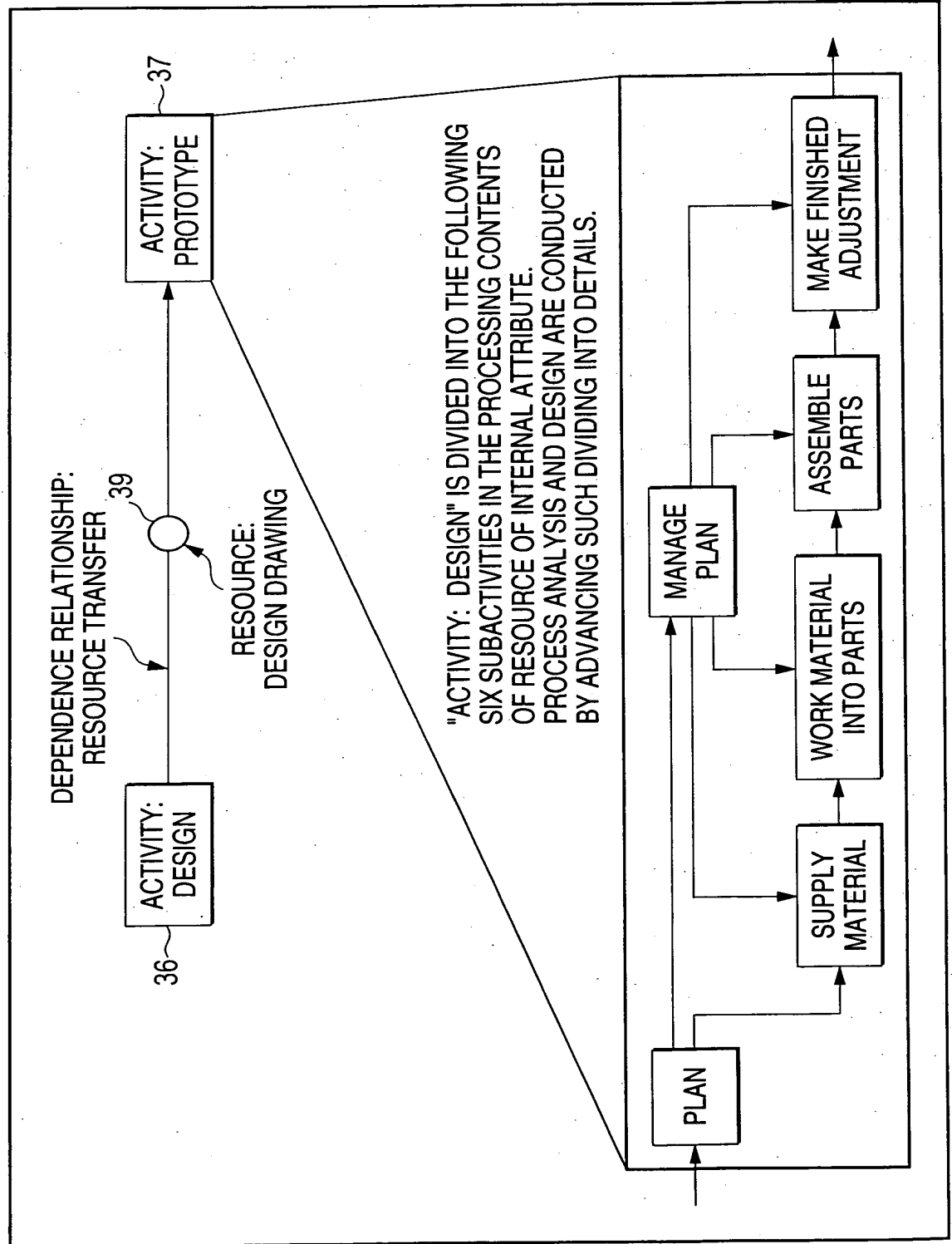
FIG. 2



3/31

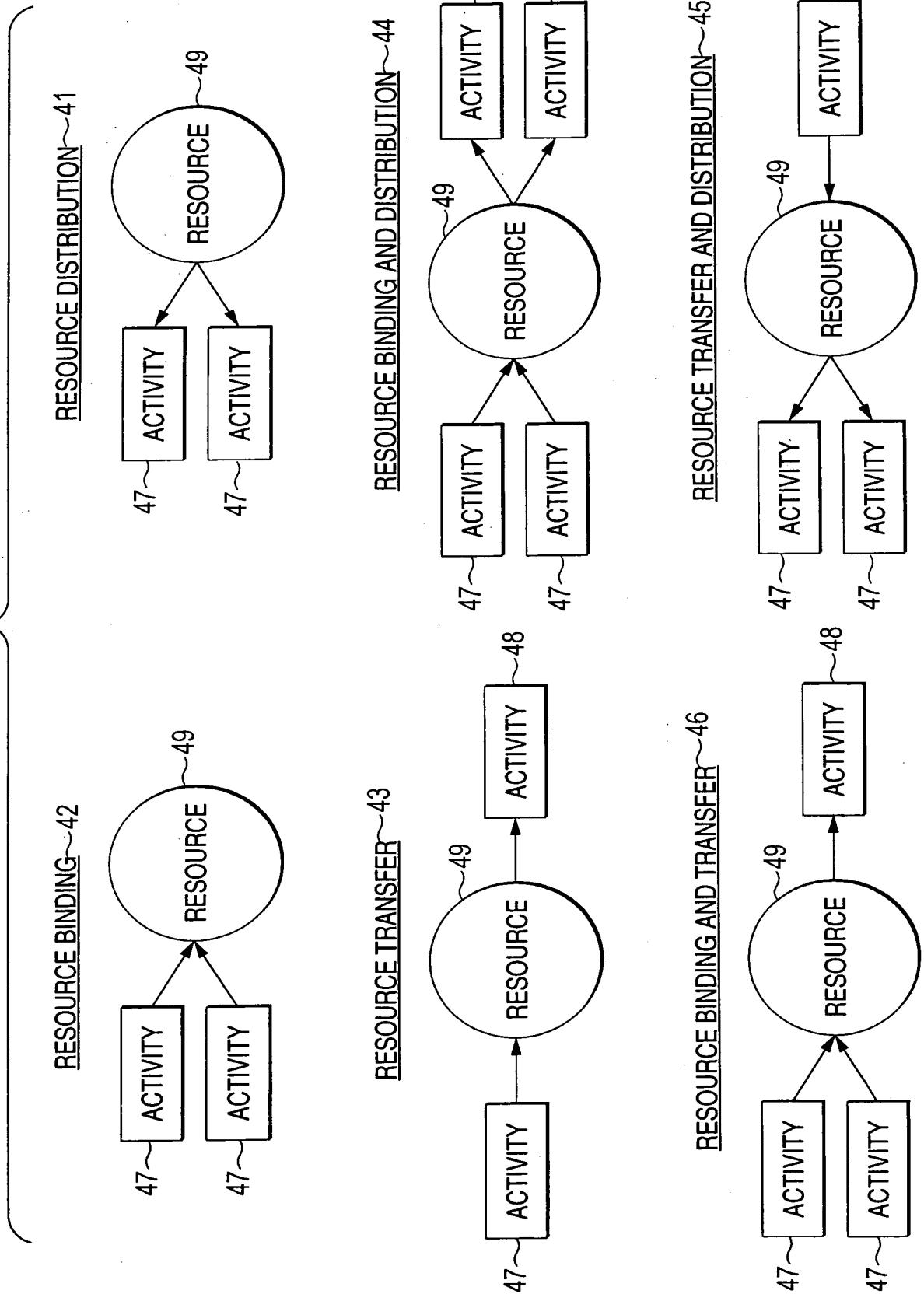
FIG. 3

EPISTEMOLOGICAL GROUND: DESIGN



4/31

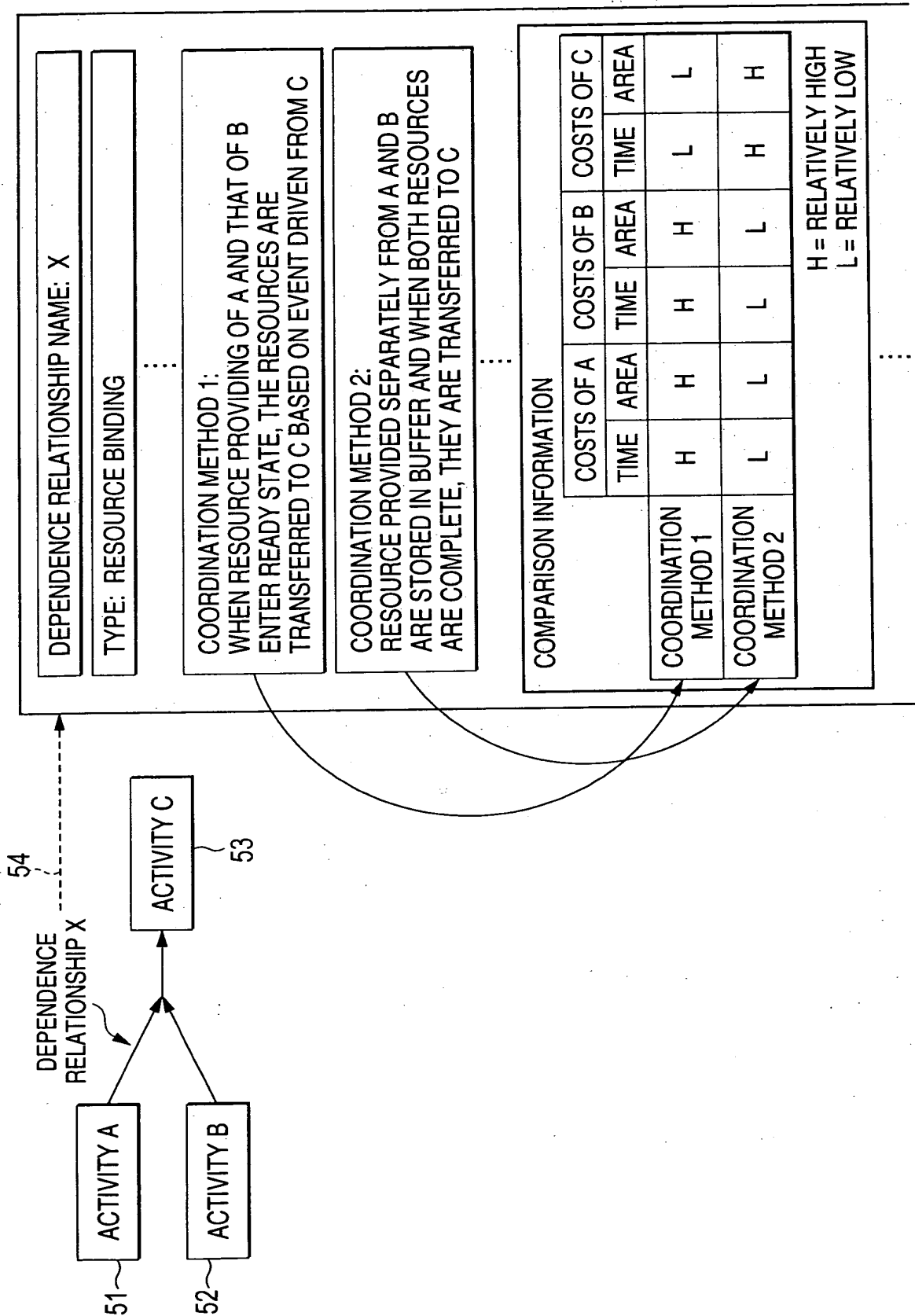
FIG. 4



5/31

FIG. 5

SPECIFIC EXAMPLE OF COORDINATION METHOD



6/31

FIG. 6

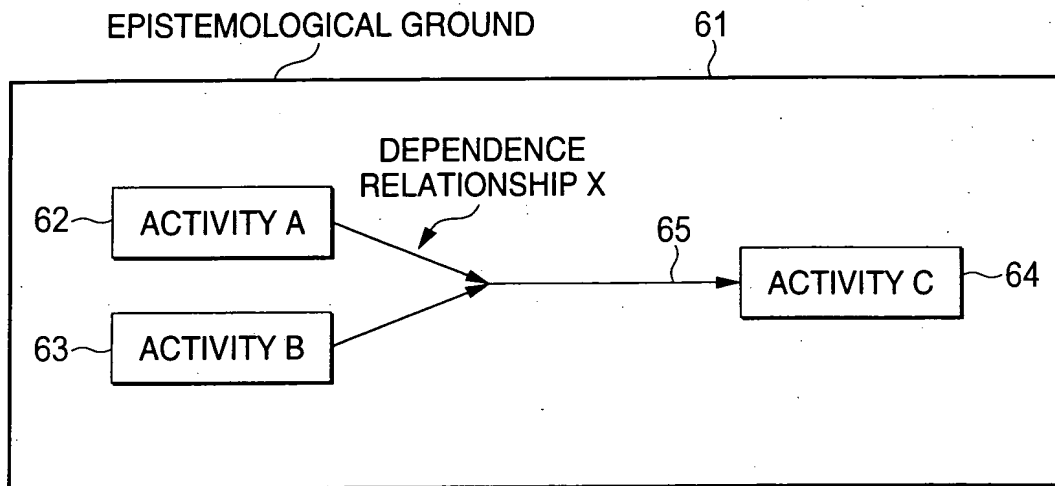
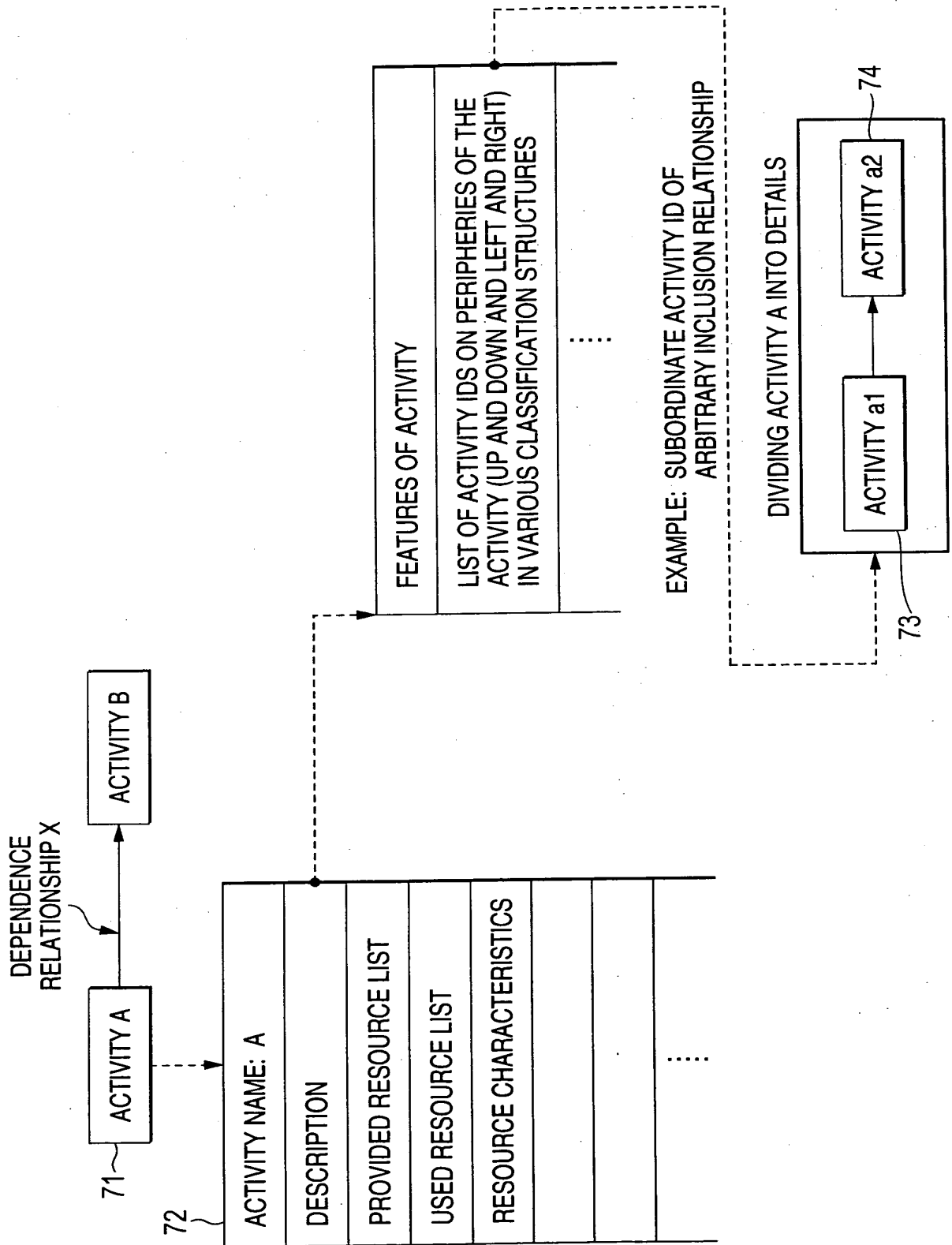


FIG. 7



8/31

FIG. 8 (a)

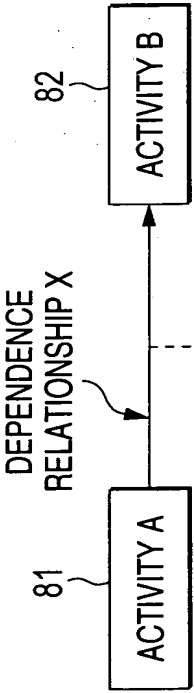


FIG. 8 (b)

DEPENDENCE RELATIONSHIP NAME: X
TYPE: TRANSFER
DESCRIPTION
RESOURCE: ID
RESOURCE PROVIDING ACTIVITY LIST
RESOURCE USING ACTIVITY LIST
COORDINATION KNOWLEDGE
...

COORDINATION METHOD 1: C
COORDINATION METHOD 2: D
COMPARISON INFORMATION OF COORDINATION METHOD
...

9/31

FIG. 9

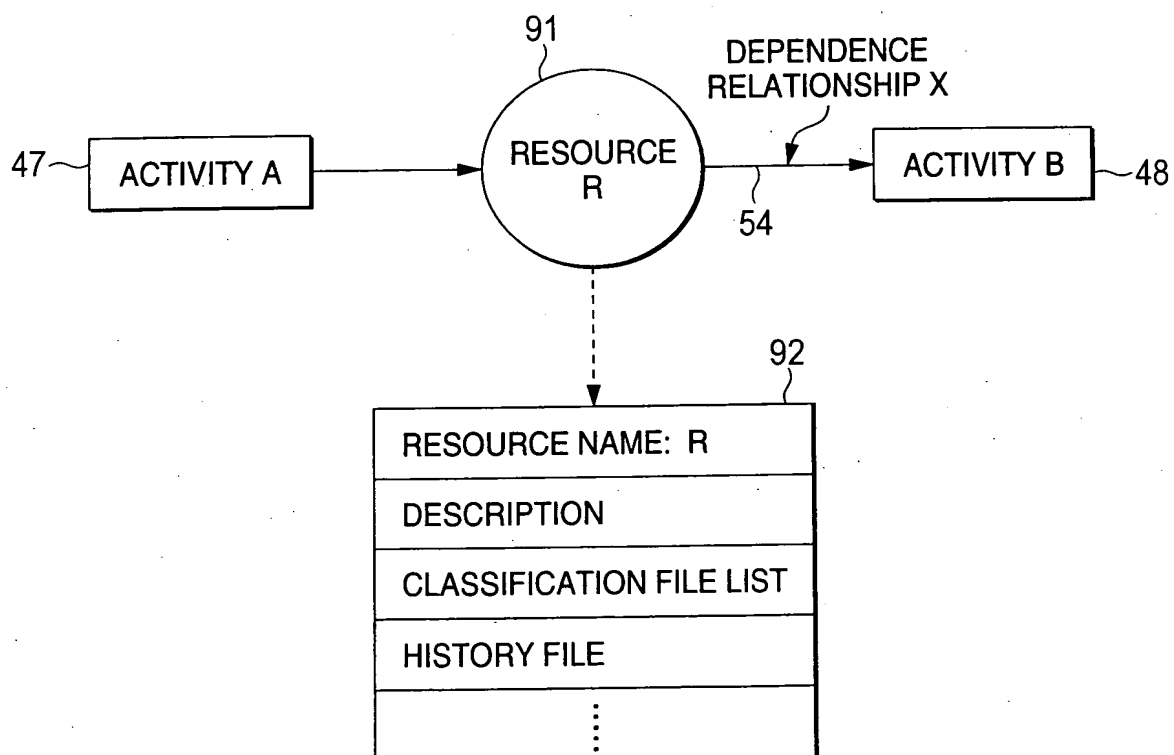
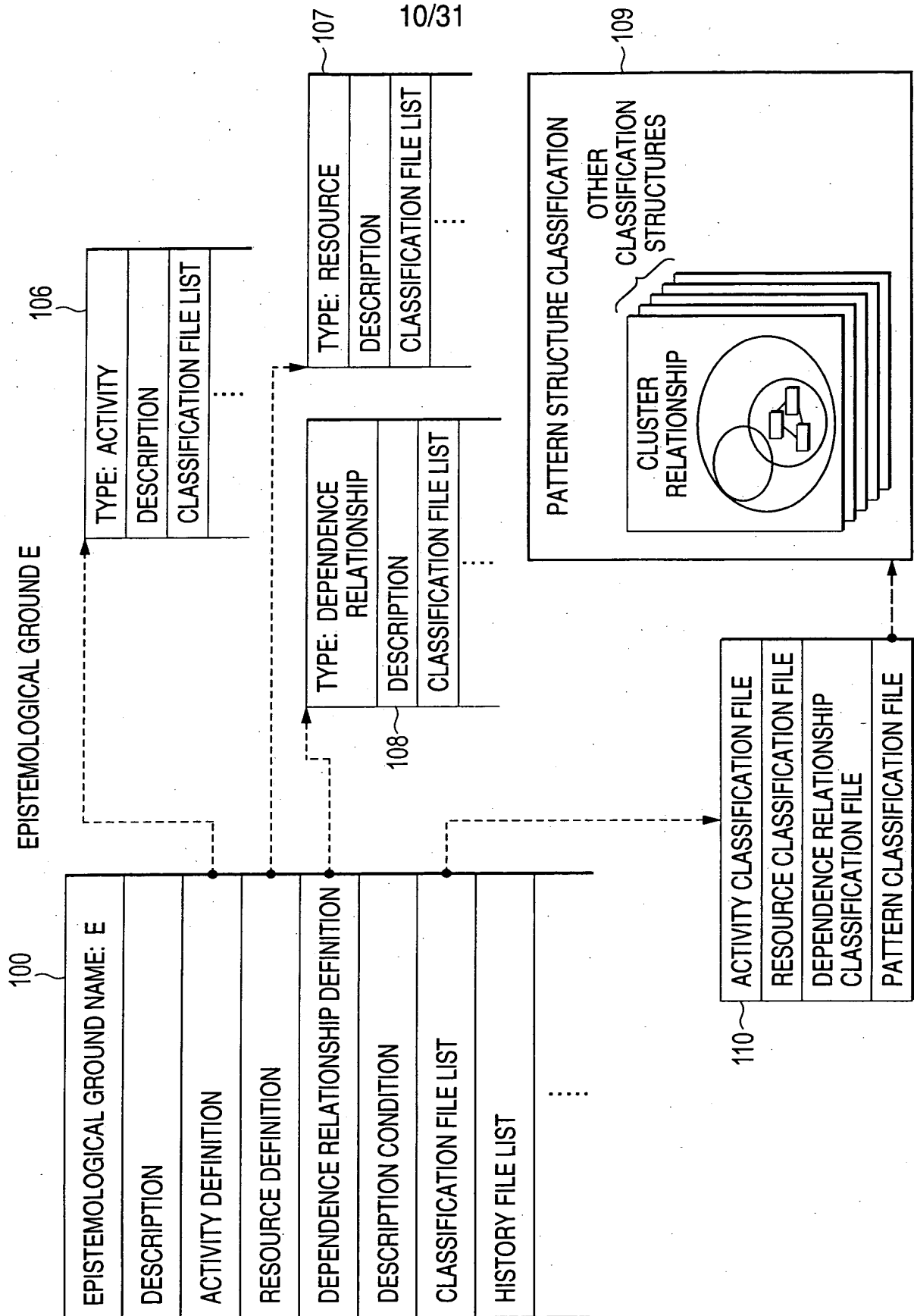
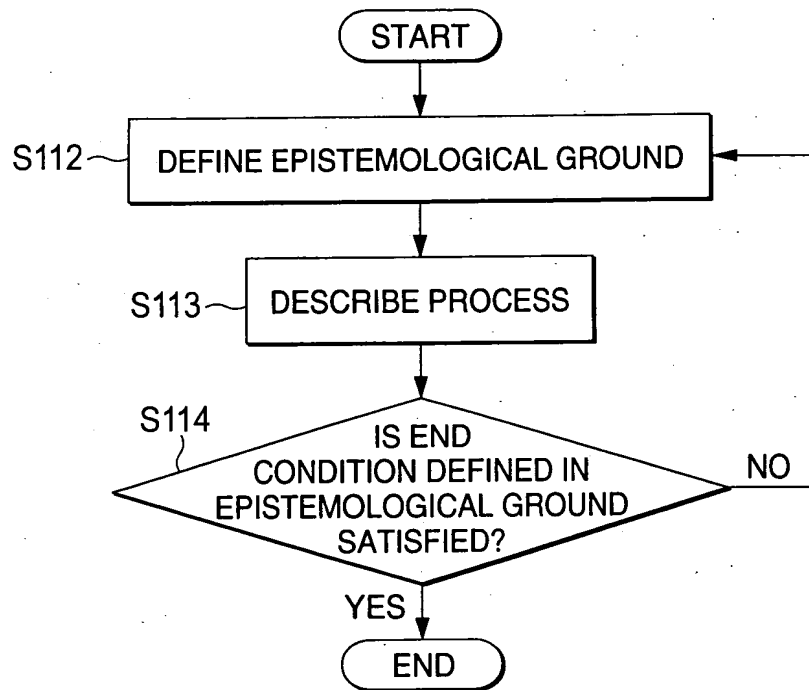


FIG. 10



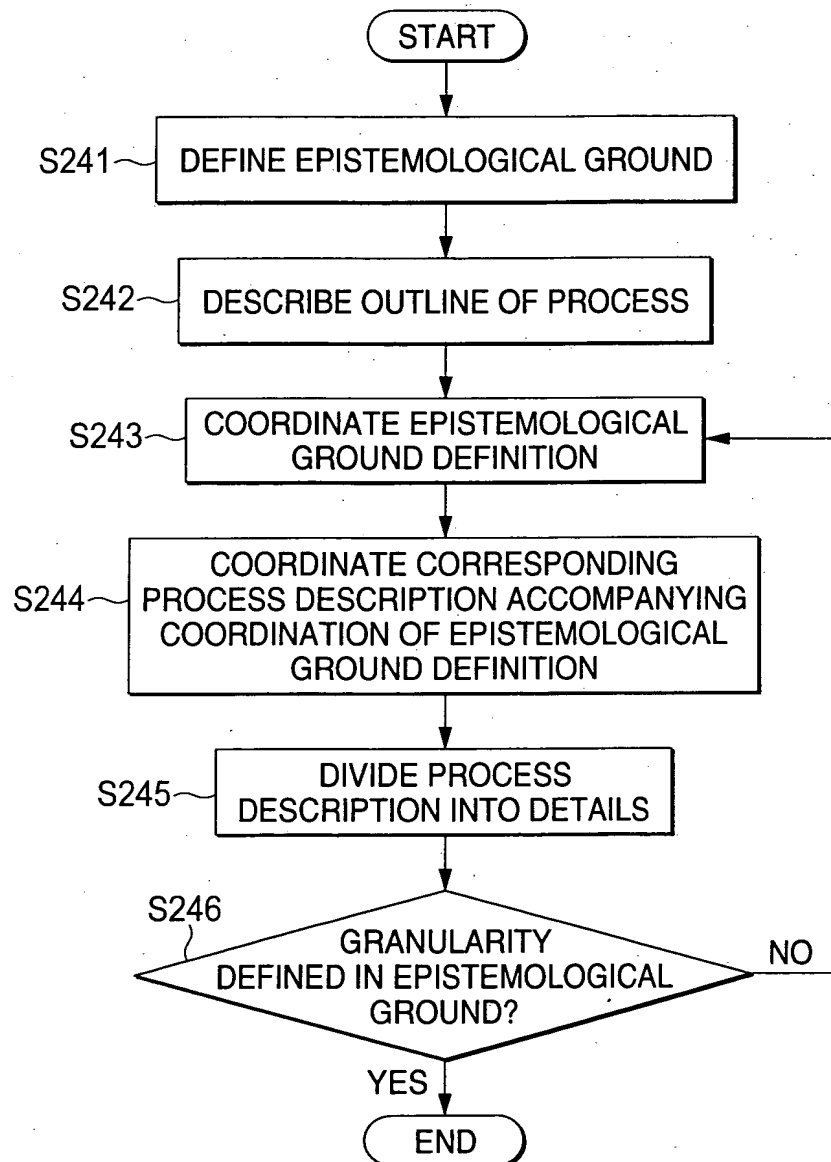
11/31

FIG. 11



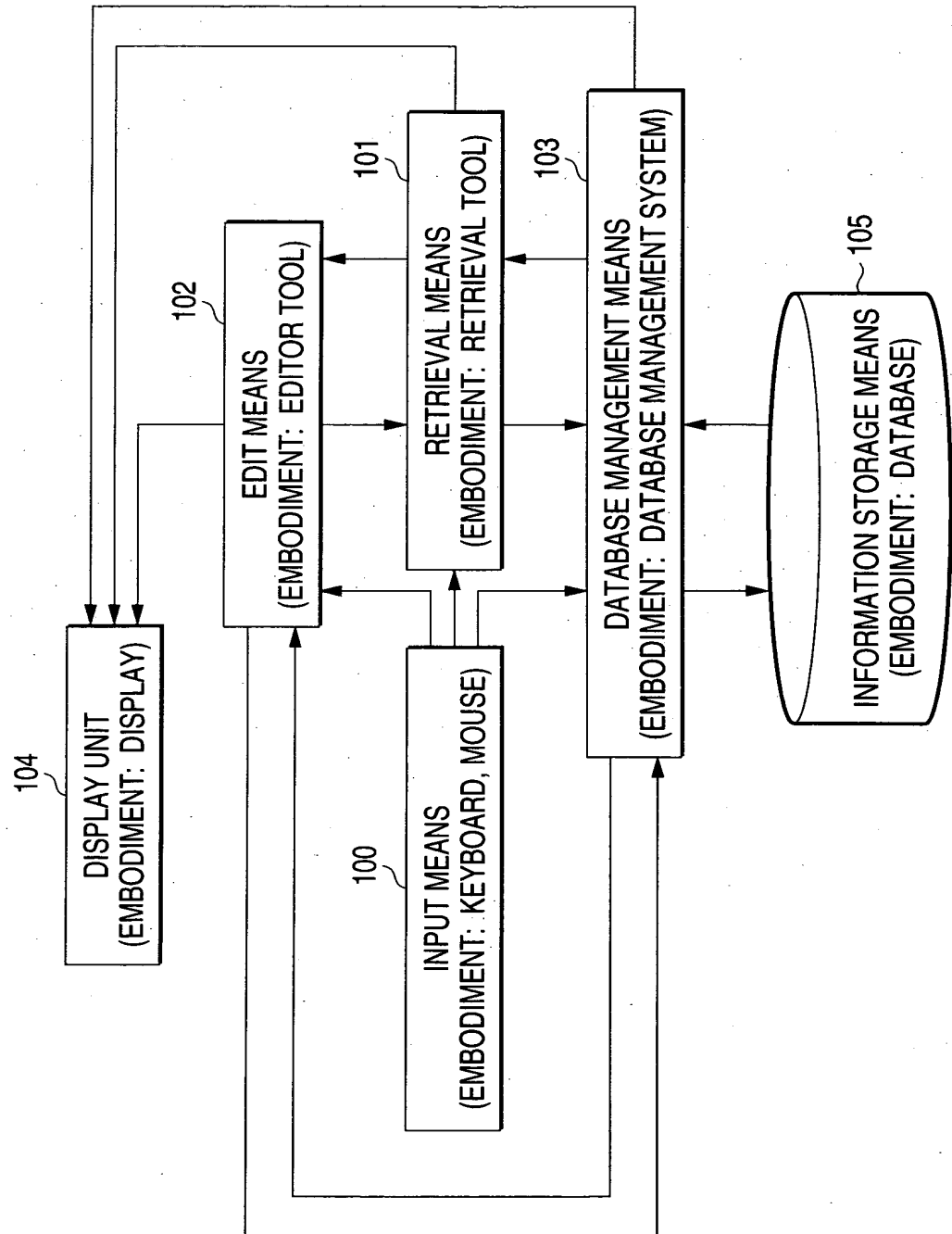
12/31

FIG. 12



13/31

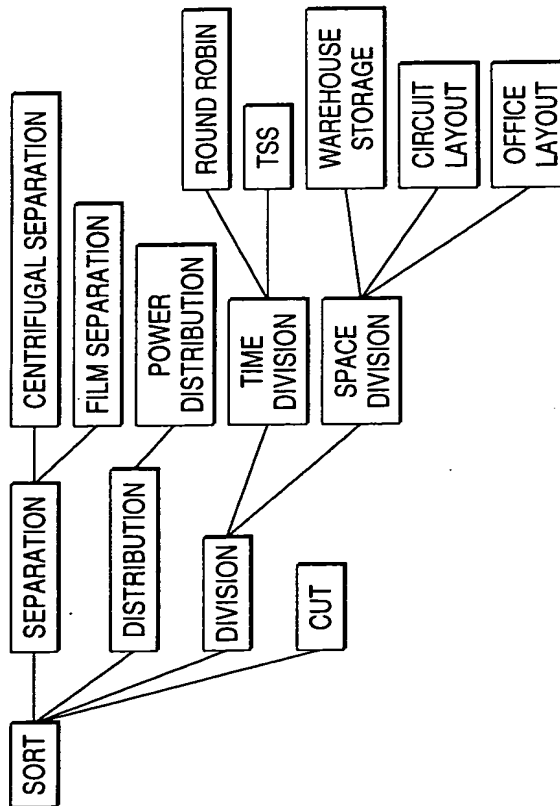
FIG. 13



14/31

FIG. 14A

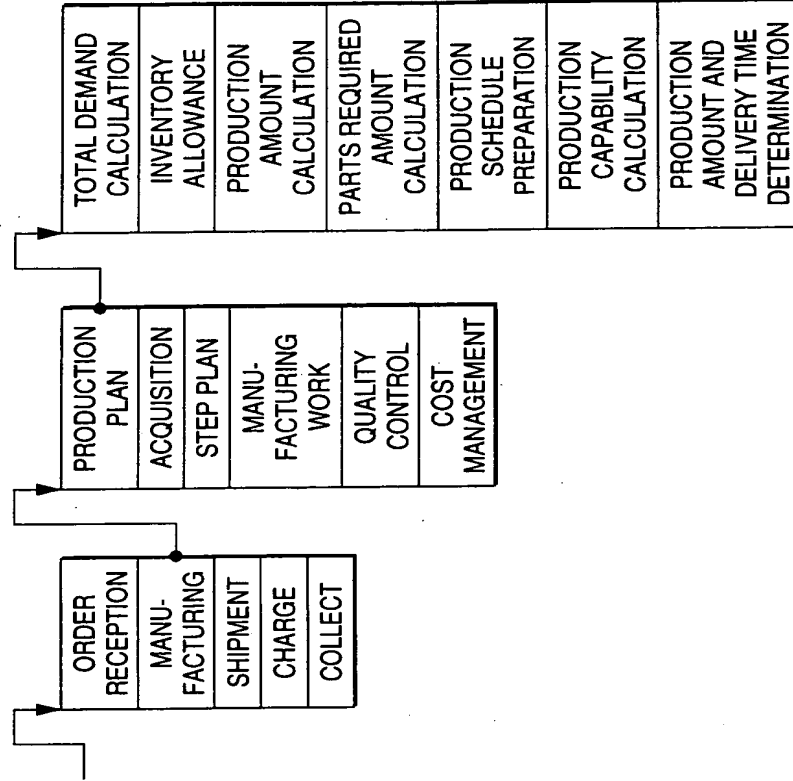
EXAMPLE OF CLASSIFICATION STRUCTURE OF ABSTRACT AND CONCRETE RELATIONSHIP OF ACTIVITIES



ABSTRACT AND CONCRETE CLASSIFICATION CONCERNING ACTIVITIES RETAINED IN GLOBAL EPISTEMOLOGICAL GROUND. DISPLAY OF SUBORDINATE CLASSIFICATION FROM "DIVISION."

141

EXAMPLE OF CLASSIFICATION STRUCTURE OF INCLUSION RELATIONSHIP OF ACTIVITIES

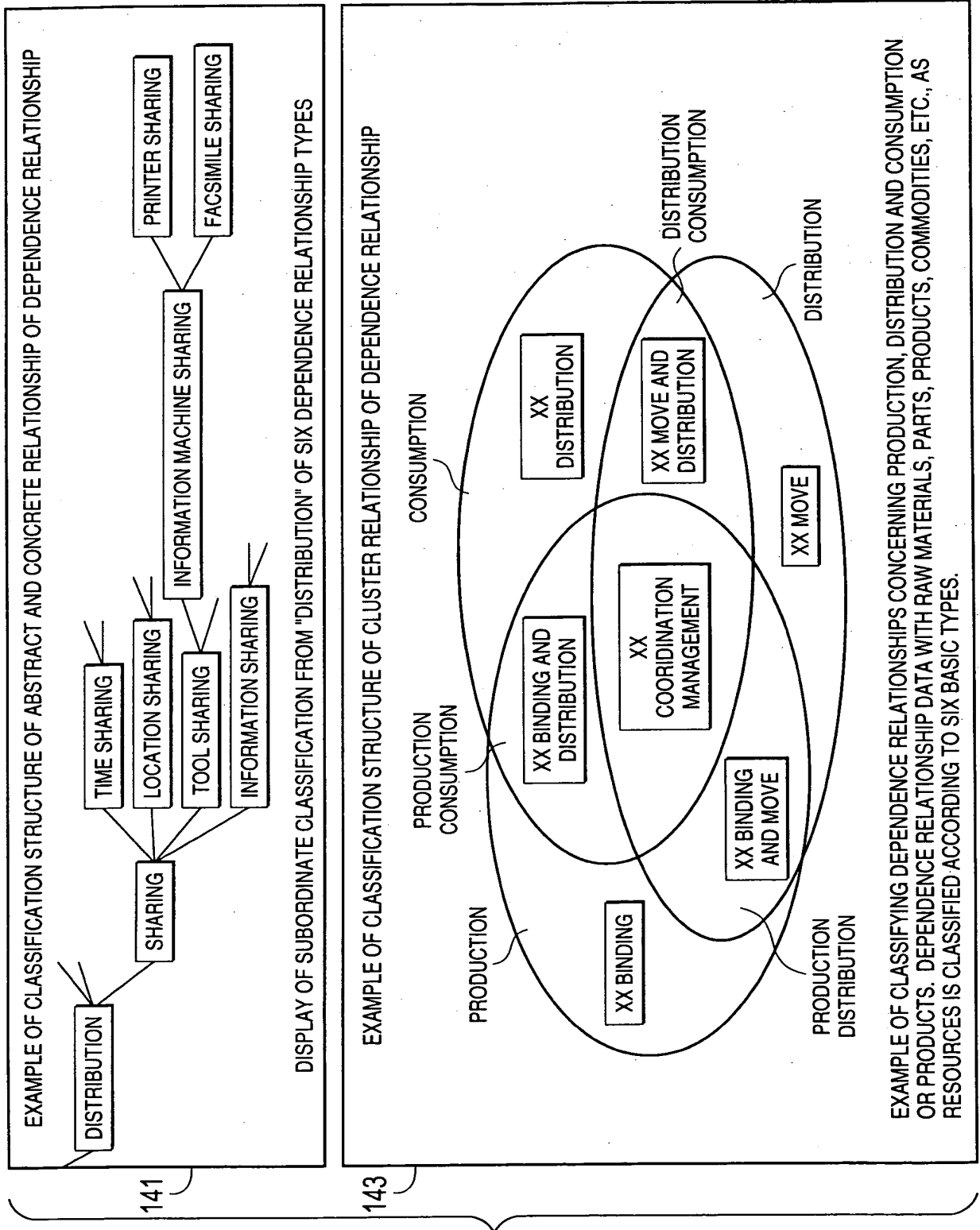


INCLUSION CLASSIFICATION CONCERNING ACTIVITIES RETAINED IN EPISTEMOLOGICAL GROUND "MANUFACTURING PROCESS." DISPLAY OF SUBORDINATE CLASSIFICATION FROM "MANUFACTURING."

142

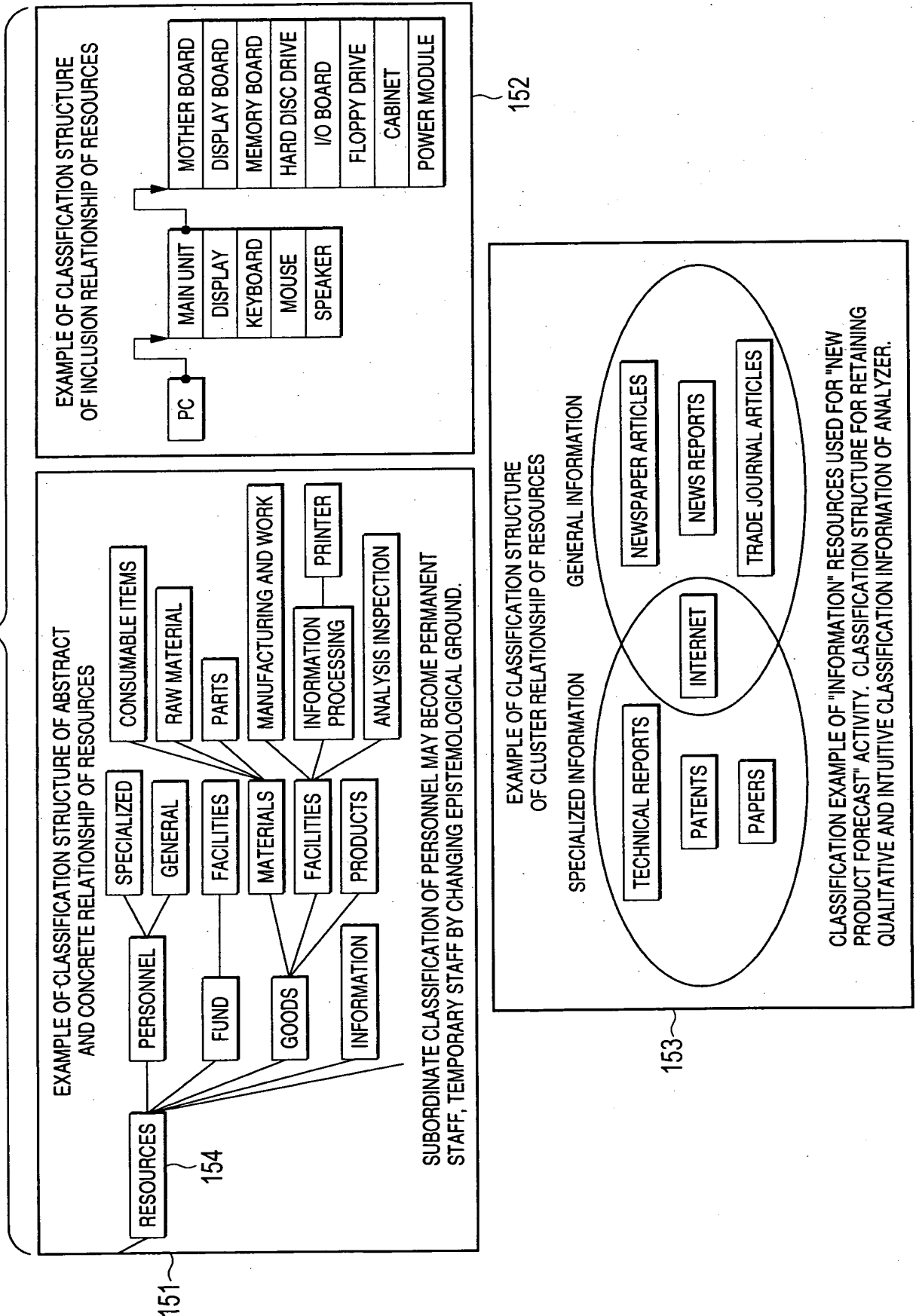
15/31

FIG. 14B



16/31

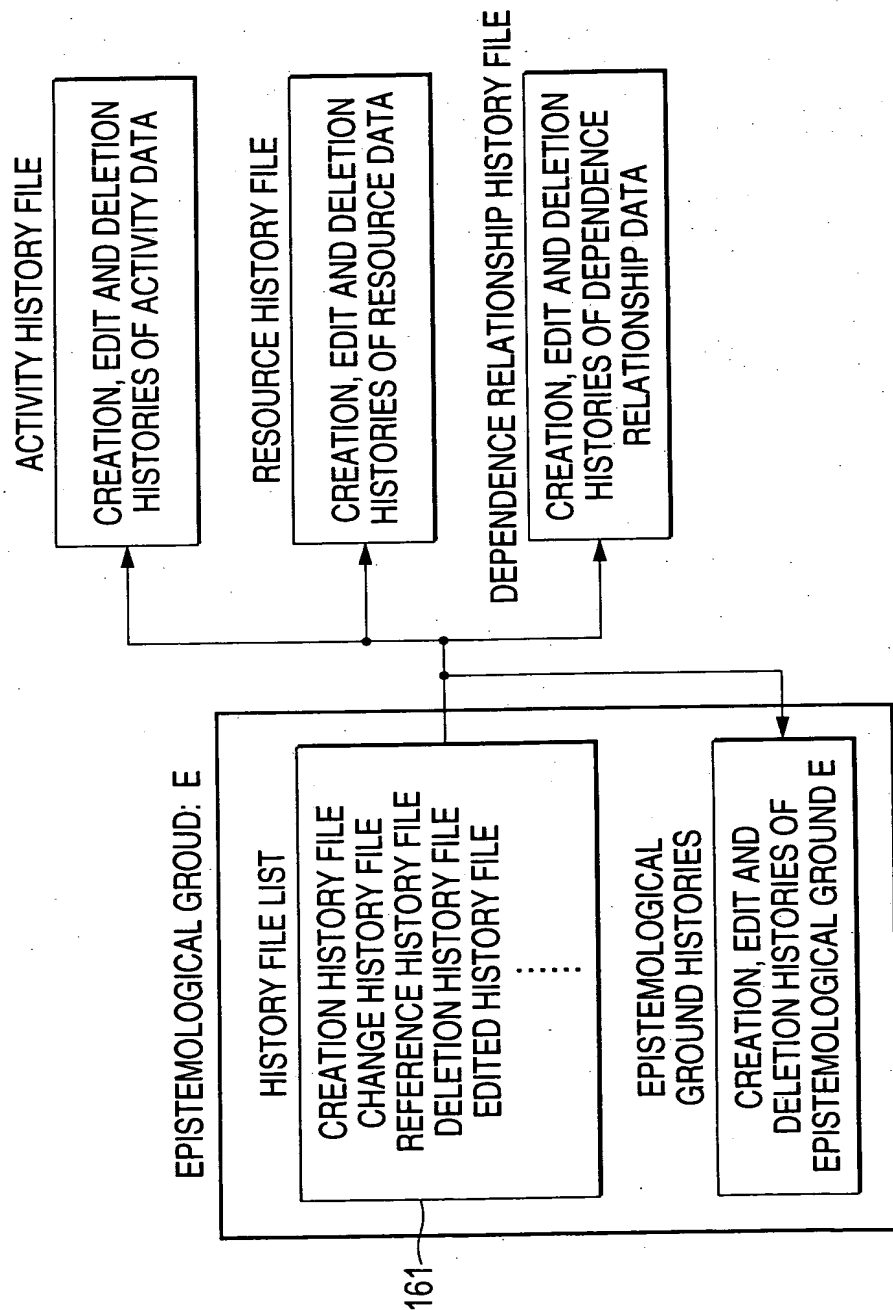
FIG. 15



17/31

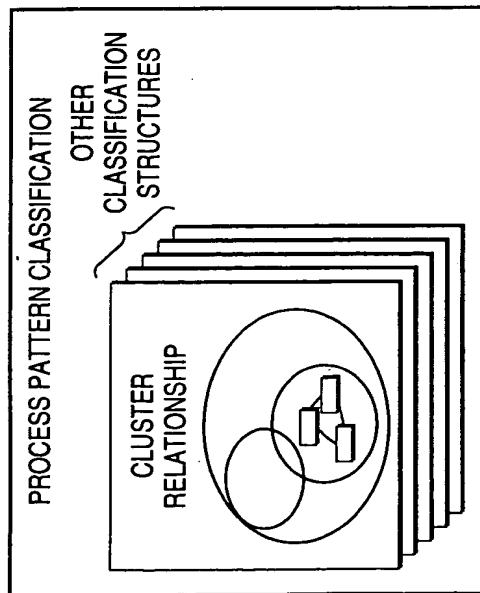
FIG. 16

CLASSIFICATION OF HISTORY INFORMATION



18/31

FIG. 17



EXAMPLE OF CLUSTER FOR CLASSIFYING PROCESS PATTERNS

SUCH PROCESS PATTERN WHICH BECOMES WELL-WORN MEANS UNDER ONE CONDITION CORRESPONDS MAINLY TO COORDINATION METHOD (= ACTIVITY) OF DEPENDENCE RELATIONSHIP. IN THE FOLLOWING EXAMPLE, IT BECOMES A SET OF CLASSIFICATIONS CORRESPONDING TO CELLS OF MATRIX PROVIDED BY COMBINING SUPERORDINATE CONCEPTS SUCH AS L, M, N, O ($L \times M \times N \times O$), FOR EXAMPLE, IN GLOBAL EPISTEMOLOGICAL GROUND.

171

174

173

172

RESOURCE CHARACTERISTIC: L

SPACE RESOURCES
TIME RESOURCES
ENERGY RESOURCES (ELECTRICITY, FUEL, ETC.)
MATTER RESOURCES (MATERIAL, TOOLS, ETC.)
INFORMATION RESOURCES
PROCESSING RESOURCES (PERSONNEL, PROGRAMS, ETC.)
...

DEPENDENCE RELATIONSHIP: M

TRANSFER
BINDING
DISTRIBUTION
BINDING AND DISTRIBUTION
BINDING AND TRANSFER
TRANSFER AND DISTRIBUTION
...

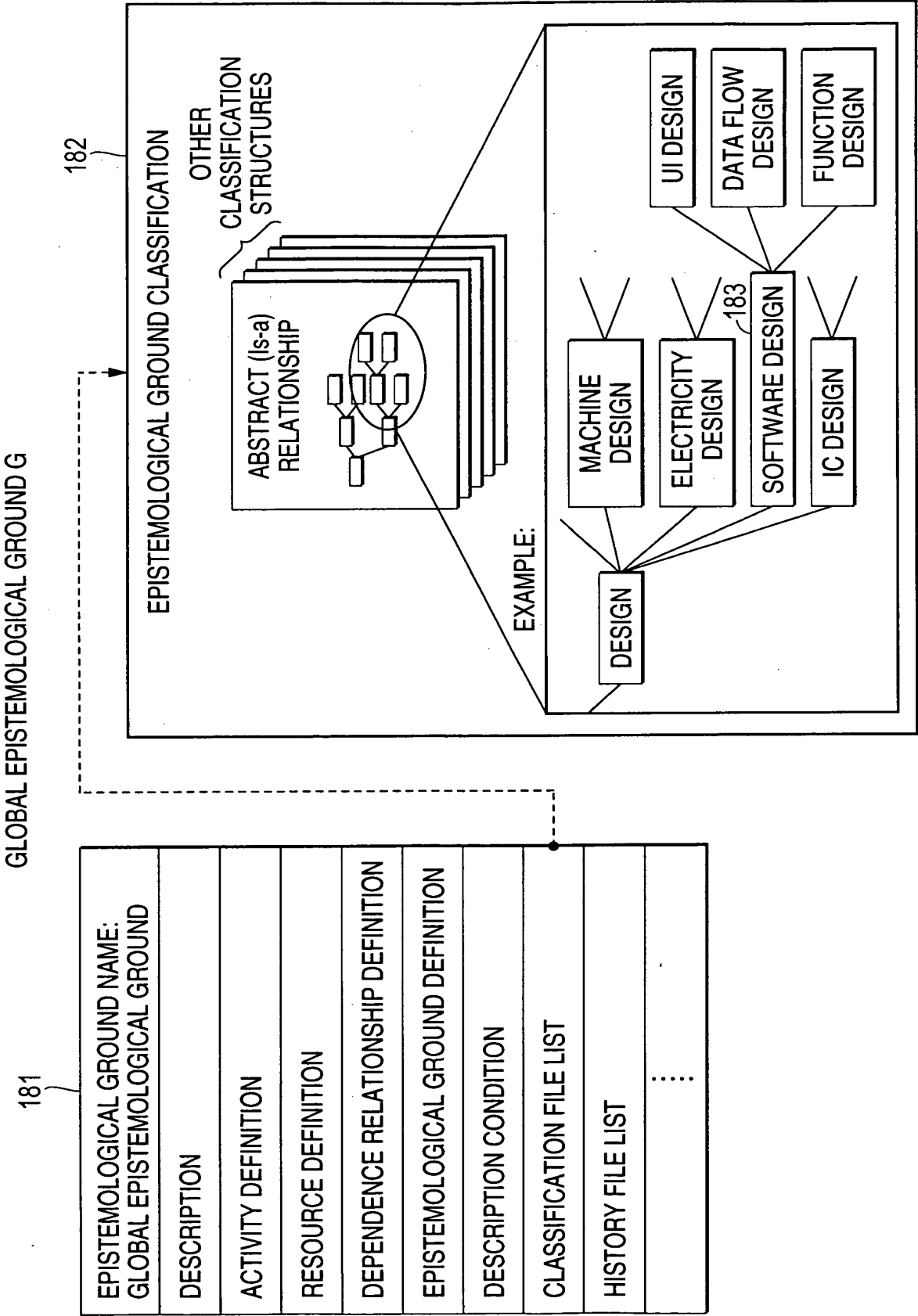
ACTIVITY-TO-ACTIVITY
CHARACTERISTIC: N

RESOURCE PROVIDING ACTIVITY LEADING
RESOURCE USING ACTIVITY LEADING
INTERDEPENDENCE
...

PRIORITY CONDITION: O

DELIVERY TIME
COSTS
QUALITY
STABILIZATION
QUICK RESPONSE
INDIVIDUAL DEAL POWER
...

FIG. 18



20/31

FIG. 19A

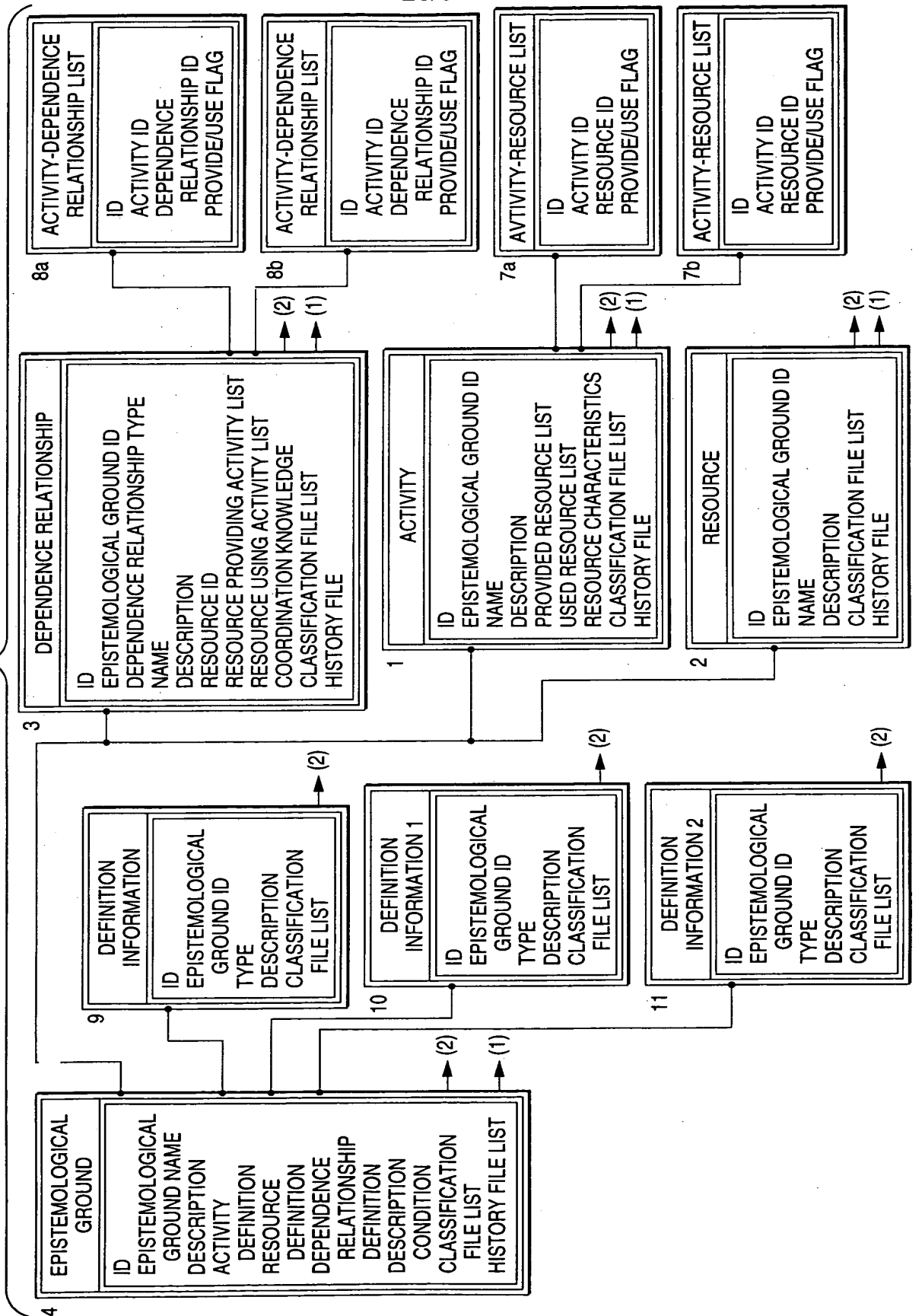
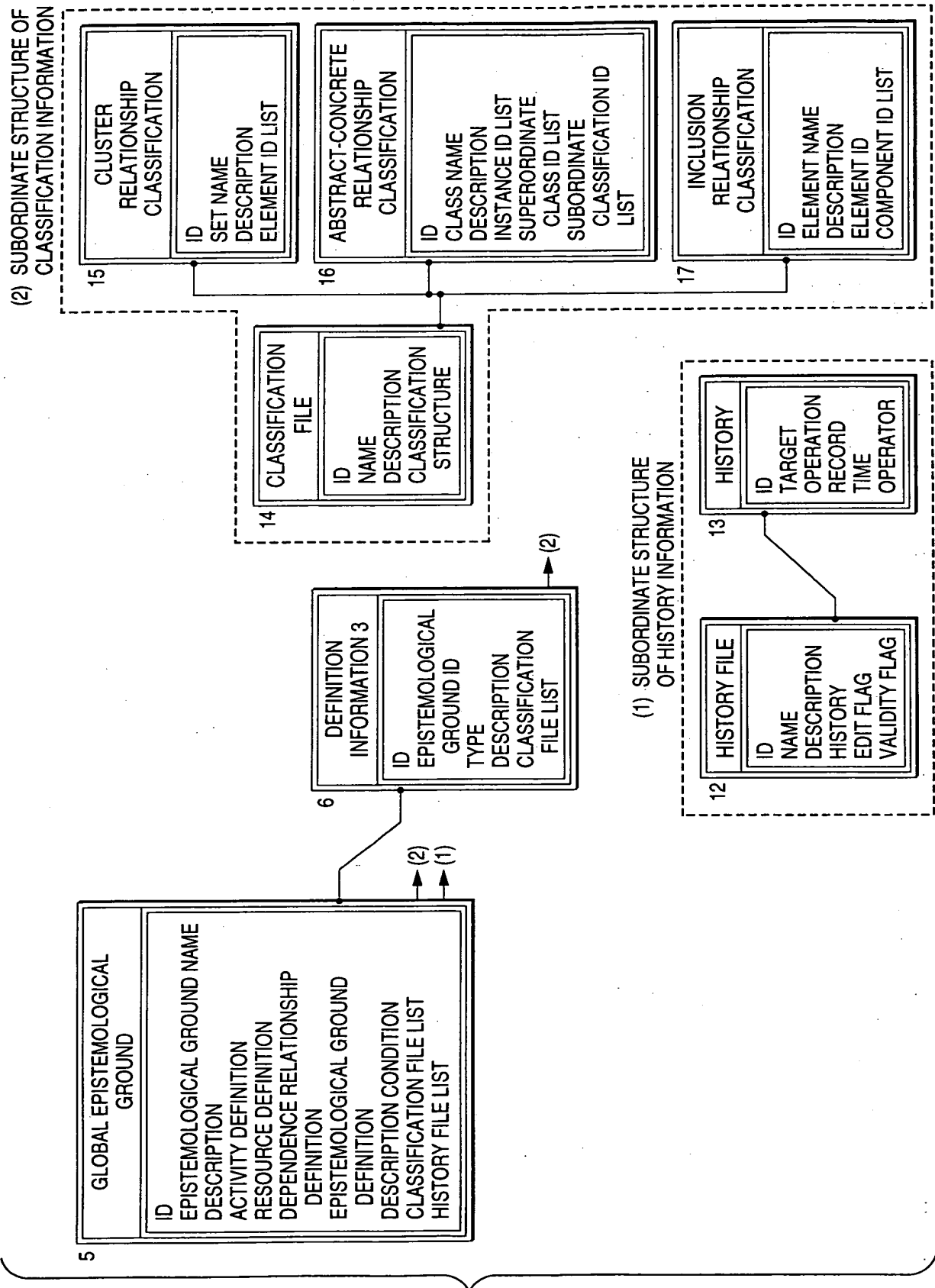


FIG. 19B



22/31

FIG. 20A

ACTIVITY

231

FIELD NAME	DESCRIPTION
ID	ID
EPISTEMOLOGICAL GROUND ID	ID OF EPISTEMOLOGICAL GROUND TO WHICH THE ACTIVITY BELONGS
NAME	NAME OF RESOURCE (NOT DUPLICATE IN THE EPISTEMOLOGICAL GROUND TO WHICH THE ACTIVITY BELONGS)
DESCRIPTION	DESCRIPTION OF FEATURES OF THE ACTIVITY AND DIRECT LINKS TO ACTIVITY IDS IN UP AND DOWN AND LEFT AND RIGHT RELATIONSHIPS OF CLASSIFICATION STRUCTURE
PROVIDED RESOURCE LIST	LIST OF PROVIDED RESOURCE IDS
USED RESOURCE LIST	LIST OF USED RESOURCE IDS
RESOURCE CHARACTERISTICS	DESCRIPTION OF USED OR PROVIDED RESOURCE TYPES, INTERNAL ATTRIBUTES AND RELATIONSHIP BETWEEN RESOURCES
CLASSIFICATION FILE LIST	LIST OF CLASSIFICATION FILE IDS
HISTORY FILE	CREATION HISTORY

DEPENDENCE RELATIONSHIP

232

FIELD NAME	DESCRIPTION
ID	ID
EPISTEMOLOGICAL GROUND ID	ID OF EPISTEMOLOGICAL GROUND TO WHICH THE DEPENDENCE RELATIONSHIP BELONGS
DEPENDENCE RELATIONSHIP TYPE	ONE OF SIX DEPENDENCE RELATIONSHIP TYPES (TRANSFER, BINDING, DISTRIBUTION, BINDING AND TRANSFER, TRANSFER AND DISTRIBUTION, BINDING AND DISTRIBUTION)
NAME	NAME OF DEPENDENCE RELATIONSHIP (NOT DUPLICATE IN THE EPISTEMOLOGICAL GROUND TO WHICH THE DEPENDENCE RELATIONSHIP BELONGS)
DESCRIPTION	DESCRIPTION OF FEATURES OF THE DEPENDENCE RELATIONSHIP AND DIRECT LINKS TO DEPENDENCE RELATIONSHIP IDS IN UP AND DOWN AND LEFT AND RIGHT RELATIONSHIPS OF CLASSIFICATION STRUCTURE
RESOURCE ID	INTERVENING RESOURCE ID
RESOURCE PROVIDING ACTIVITY LIST	LIST OF RESOURCE PROVIDING ACTIVITY IDS
RESOURCE USING ACTIVITY LIST	LIST OF RESOURCE USING ACTIVITY IDS
COORDINATION KNOWLEDGE	A PLURALITY OF COORDINATION METHODS FOR COORDINATING INDEPENDENCE RELATIONSHIP AND COORDINATION METHOD COMPARISON INFORMATION (POINTERS TO DOCUMENTS, FIGURES AND TABLES, PROCESS DESCRIPTION DATA)
CLASSIFICATION FILE LIST	LIST OF CLASSIFICATION FILE IDS
HISTORY FILE	CREATION HISTORY

23/31

FIG. 20B

RESOURCE

233

FIELD NAME	DESCRIPTION
ID	ID
EPISTEMOLOGICAL GROUND ID	ID OF EPISTEMOLOGICAL GROUND TO WHICH THE RESOURCE BELONGS
NAME	NAME OF RESOURCE (NOT DUPLICATE IN THE EPISTEMOLOGICAL GROUND TO WHICH THE RESOURCE BELONGS)
DESCRIPTION	DESCRIPTION OF FEATURES OF THE RESOURCE AND DIRECT LINKS TO RESOURCE IDS IN UP AND DOWN AND LEFT AND RIGHT RELATIONSHIPS OF CLASSIFICATION STRUCTURE
CLASSIFICATION FILE LIST	LIST OF CLASSIFICATION FILE IDS
HISTORY FILE LIST	CREATION HISTORY

EPISTEMOLOGICAL GROUND

234

FIELD NAME	DESCRIPTION
ID	ID
EPISTEMOLOGICAL GROUND NAME	NAME OF EPISTEMOLOGICAL GROUND (NOT ALLOWED TO BE DUPLICATE IN SUBORDINATE CLASSIFICATION IN ONE EPISTEMOLOGICAL GROUND)
DESCRIPTION	DESCRIPTION OF FEATURES OF THE EPISTEMOLOGICAL GROUND AND DIRECT LINKS TO EPISTEMOLOGICAL GROUND IDS IN UP AND DOWN AND LEFT AND RIGHT RELATIONSHIPS OF CLASSIFICATION STRUCTURE
ACTIVITY DEFINITION	DEFINITION CONCERNING DESCRIPTION OF ACTIVITY CREATED IN THE EPISTEMOLOGICAL GROUND (TYPE, GRANULARITY, CLASSIFICATION CONDITIONS, ETC.)
RESOURCE DEFINITION	DEFINITION CONCERNING DESCRIPTION OF RESOURCE CREATED IN THE EPISTEMOLOGICAL GROUND (TYPE, GRANULARITY, CLASSIFICATION CONDITIONS, ETC.)
DEPENDENCE RELATIONSHIP DEFINITION	DEFINITION CONCERNING DESCRIPTION OF DEPENDENCE RELATIONSHIP CREATED IN THE EPISTEMOLOGICAL GROUND (TYPE, GRANULARITY, CLASSIFICATION CONDITIONS, ETC.)
DESCRIPTION CONDITION	CONSTRAINTS NOT CONTAINED IN THE THREE ABOVE-DESCRIBED DEFINITIONS FOR DESCRIBING PROCESS IN THE EPISTEMOLOGICAL GROUND
CLASSIFICATION FILE LIST	LIST OF CLASSIFICATION FILE IDS CONCERNING ACTIVITIES, RESOURCES, DEPENDENCE RELATIONSHIPS AND THEIR ATTRIBUTES
HISTORY FILE LIST	LIST OF HISTORY FILE IDS OF WORK HISTORIES, ANALYSIS STEPS EDITED FOR ANALYSIS, AND THE LIKE ON THE EPISTEMOLOGICAL GROUND

24/31

FIG. 21A

CLASSIFICATION FILE

235

FIELD NAME	DESCRIPTION
ID	ID
NAME	NAME OF CLASSIFICATION
DESCRIPTION	DESCRIPTION OF CLASSIFICATION
CLASSIFICATION STRUCTURE	IDS OF VARIOUS TABLES OF CLASSIFICATION STRUCTURES (CLUSTER, INCLUSION, ABSTRACT-CONCRETE RELATIONSHIP, PATTERN, ETC.)

CLUSTER RELATIONSHIP CLASSIFICATION

236

FIELD NAME	DESCRIPTION
ID	ID
SET NAME	NAME OF SET
DESCRIPTION	DESCRIPTION OF SET DESCRIPTION OF CONDITIONS OF DATA THAT CAN BE CLASSIFIED AS ELEMENTS OF THE SET AND THE LIKE
ELEMENT ID LIST	LIST OF ELEMENT DATA IDS

INCLUSION RELATIONSHIP CLASSIFICATION

237

FIELD NAME	DESCRIPTION
ID	ID
ELEMENT NAME	NAME OF INCLUDING PARTY IF ELEMENT EXISTS, "EPISTEMOLOGICAL GROUND NAME: ELEMENT NAME"
DESCRIPTION	DESCRIPTION OF INCLUSION RELATIONSHIP FOR ACTIVITY, DESCRIPTION OF CHARACTERISTICS OF SUBACTIVITY GROUP; FOR RESOURCE, DESCRIPTION OF CHARACTERISTICS OF COMPONENT GROUP
ELEMENT ID	DATA ID WHEN INCLUDING PARTY EXISTS AS ACTUAL DATA
COMPONENT OF ID LIST	LIST OF IDS OF DATA OF COMPONENTS

25/31

FIG. 21B

ABSTRACT-CONCRETE RELATIONSHIP CLASSIFICATION

238

FIELD NAME	DESCRIPTION
ID	ID
CLASS NAME	NAME OF CLUSTER
DESCRIPTION	DESCRIPTION OF CONDITIONS OF ELEMENTS THAT CAN BE CLASSIFIED AS INSTANCE OF THE CLASS AND THE LIKE
INSTANCE ID LIST	LIST OF DATA IDS AS INSTANCE
SUPERORDINATE CLASS ID LIST	LIST OF SUPERORDINATE CLASS IDS (SINGLE INHERITANCE IF TWO OR MORE IDS ARE NOT ALLOWED)
SUBORDINATE CLASSIFICATION ID LIST	LIST OF SUBORDINATE CLASS IDS

ACTIVITY-RESOURCE LIST

239

FIELD NAME	DESCRIPTION
ID	ID
ACTIVITY ID	
RESOURCE ID	
PROVIDE/USE FLAG	FLAG INDICATING WHETHER THE ABOVE-MENTIONED ACTIVITY PROVIDES OR USES THE ABOVE-MENTIONED RESOURCE

ACTIVITY-DEPENDENCE RELATIONSHIP LIST

240

FIELD NAME	DESCRIPTION
ID	ID
ACTIVITY ID	
RESOURCE ID	
PROVIDE/USE FLAG	FLAG INDICATING WHETHER THE ABOVE-MENTIONED ACTIVITY IS A PROVIDING OR USING ACTIVITY IN THE ABOVE-MENTIONED DEPENDENCE RELATIONSHIP

26/31

FIG. 22A

GLOBAL EPISTEMOLOGICAL GROUND

241

FIELD NAME	DESCRIPTION
ID	ID
EPISTEMOLOGICAL GROUND NAME	"GLOBAL EPISTEMOLOGICAL GROUND"
DESCRIPTION	DESCRIPTION OF FEATURES OF GLOBAL EPISTEMOLOGICAL GROUND
ACTIVITY DEFINITION	DEFINITION CONCERNING DESCRIPTION OF ACTIVITY GENERATED AS DEFAULT STATE
RESOURCE DEFINITION	DEFINITION CONCERNING DESCRIPTION OF RESOURCE GENERATED AS DEFAULT STATE
DEPENDENCE RELATIONSHIP DEFINITION	DEFINITION CONCERNING DESCRIPTION OF DEPENDENCE RELATIONSHIP GENERATED AS DEFAULT STATE
EPISTEMOLOGICAL GROUND DEFINITION	DEFINITION CONCERNING DESCRIPTION OF EPISTEMOLOGICAL GROUND GENERATED AS DEFAULT STATE
DESCRIPTION CONDITION	CONSTRAINTS NOT CONTAINED IN THE FOUR ABOVE-DESCRIBED DEFINITIONS FOR DESCRIBING PROCESS ON GLOBAL EPISTEMOLOGICAL GROUND
CLASSIFICATION FILE LIST	LIST OF CLASSIFICATION FILE IDS CONCERNING ACTIVITIES, RESOURCES, DEPENDENCE RELATIONSHIPS AND THEIR ATTRIBUTES
HISTORY FILE LIST	LIST OF HISTORY FILE IDS OF WORK HISTORIES, ANALYSIS STEPS EDITED FOR ANALYSIS AND THE LIKE ON GLOBAL EPISTEMOLOGICAL GROUND

DEFINITION INFORMATION

242

FIELD NAME	DESCRIPTION
ID	ID
EPISTEMOLOGICAL GROUND ID	ID OF EPISTEMOLOGICAL GROUND TO WHICH DEFINITION INFORMATION BELONGS
TYPE	ONE OF ACTIVITY, RESOURCE, DEPENDENCE RELATIONSHIP AND EPISTEMOLOGICAL GROUND
DESCRIPTION	DESCRIPTION OF RULES AND CONSTRAINTS ON CREATING AND USING DATA OF THE ABOVE-MENTIONED TYPE
CLASSIFICATION FILE LIST	LIST OF CLASSIFICATION FILE IDS WHERE GENERATED DATA MUST BE REGISTERED

27/31

FIG. 22B

HISTORY FILE

243

FIELD NAME	DESCRIPTION
ID	ID
NAME	NAME OF HISTORY
DESCRIPTION	DESCRIPTION OF HISTORY
HISTORY	ID OF HISTORY TABLE
EDIT FLAG	FLAG INDICATING THAT HISTORY IS EDITED
VALIDITY FLAG	FLAG TO USE HISTORY AS ANALYSIS STEP

HISTORY

244

FIELD NAME	DESCRIPTION
ID	ID
TARGET	TYPE OF DATA RETAINED AS HISTORY TARGET (ACTIVITY, RESOURCE, DEPENDENCE RELATIONSHIP, EPISTEMOLOGICAL GROUND, OTHERS)
OPERATION	DESCRIPTION OF OPERATION TYPE SUCH AS GENERATION, EDIT OR DELETION
RECORD	RECORD INFORMATION (DIFFERENCE FROM THE PRECEDING STATE OR DATA CONCERNING THE STATE OF ONLY THE SPECIFIED TARGET)
TIME	TIME AT WHICH AUTOMATIC OR MANUAL HISTORY RETENTION WAS EXECUTED
OPERATOR	USER AT HISTORY CREATION TIME

28/31

FIG. 23

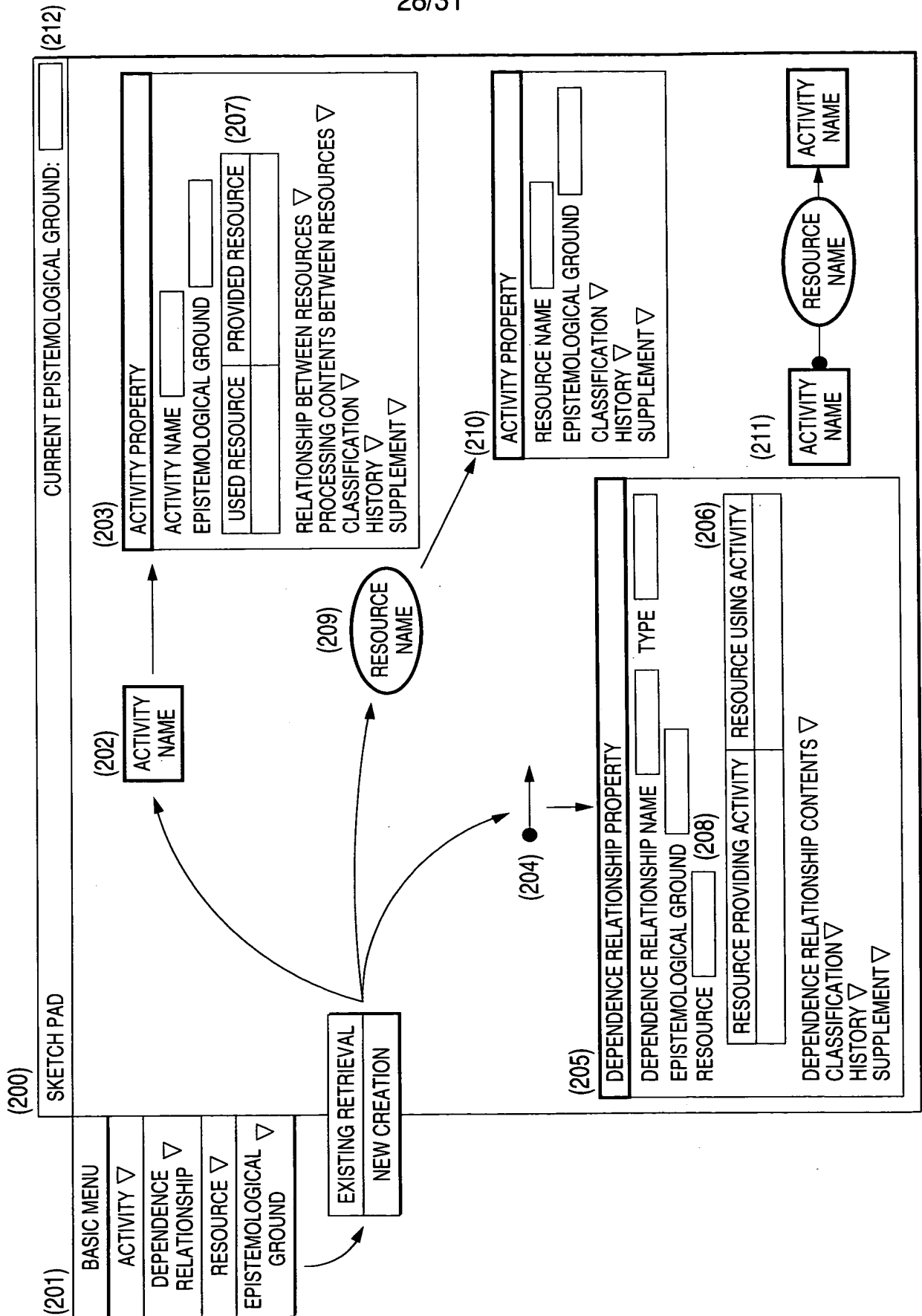


FIG. 24

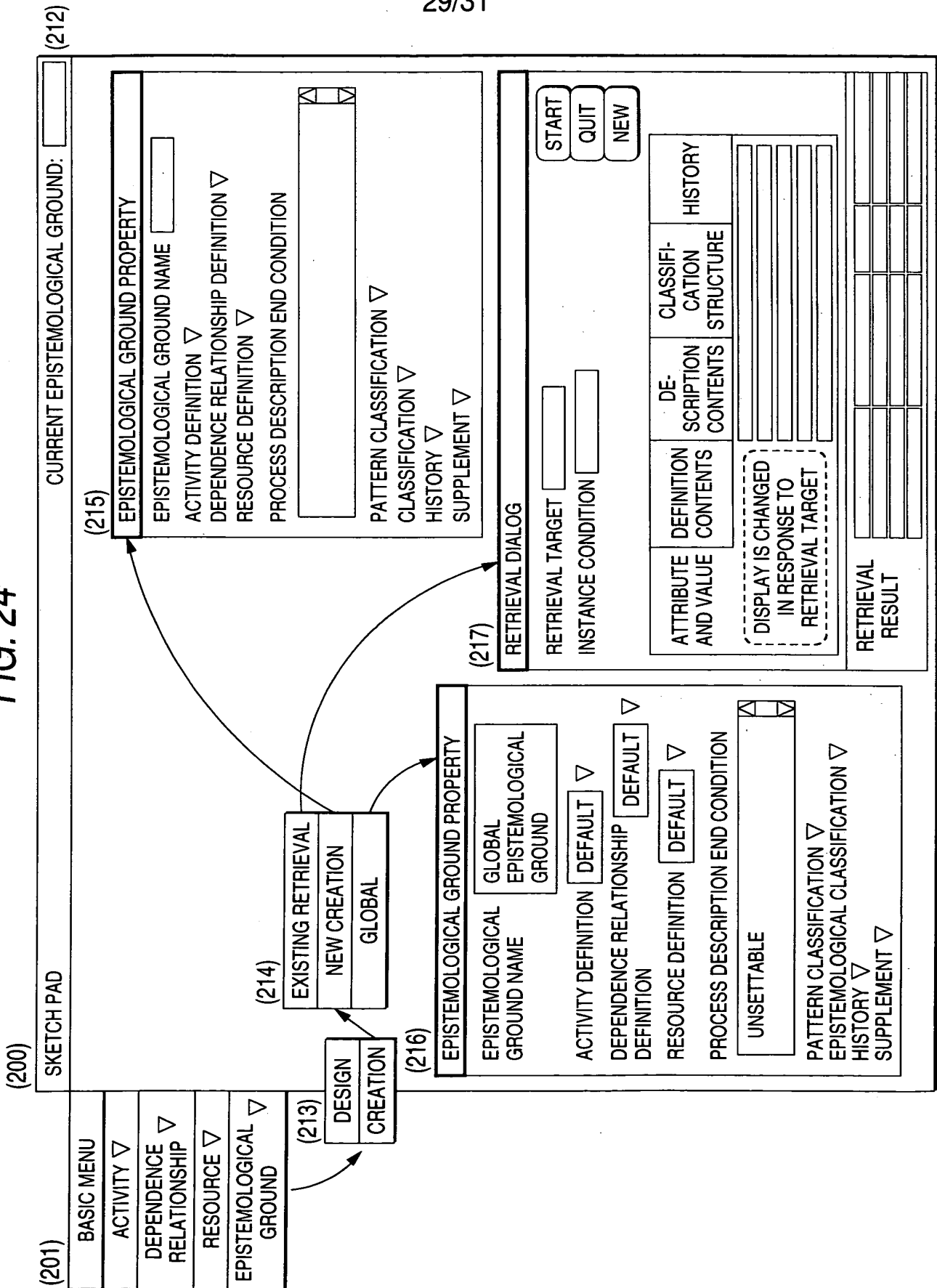
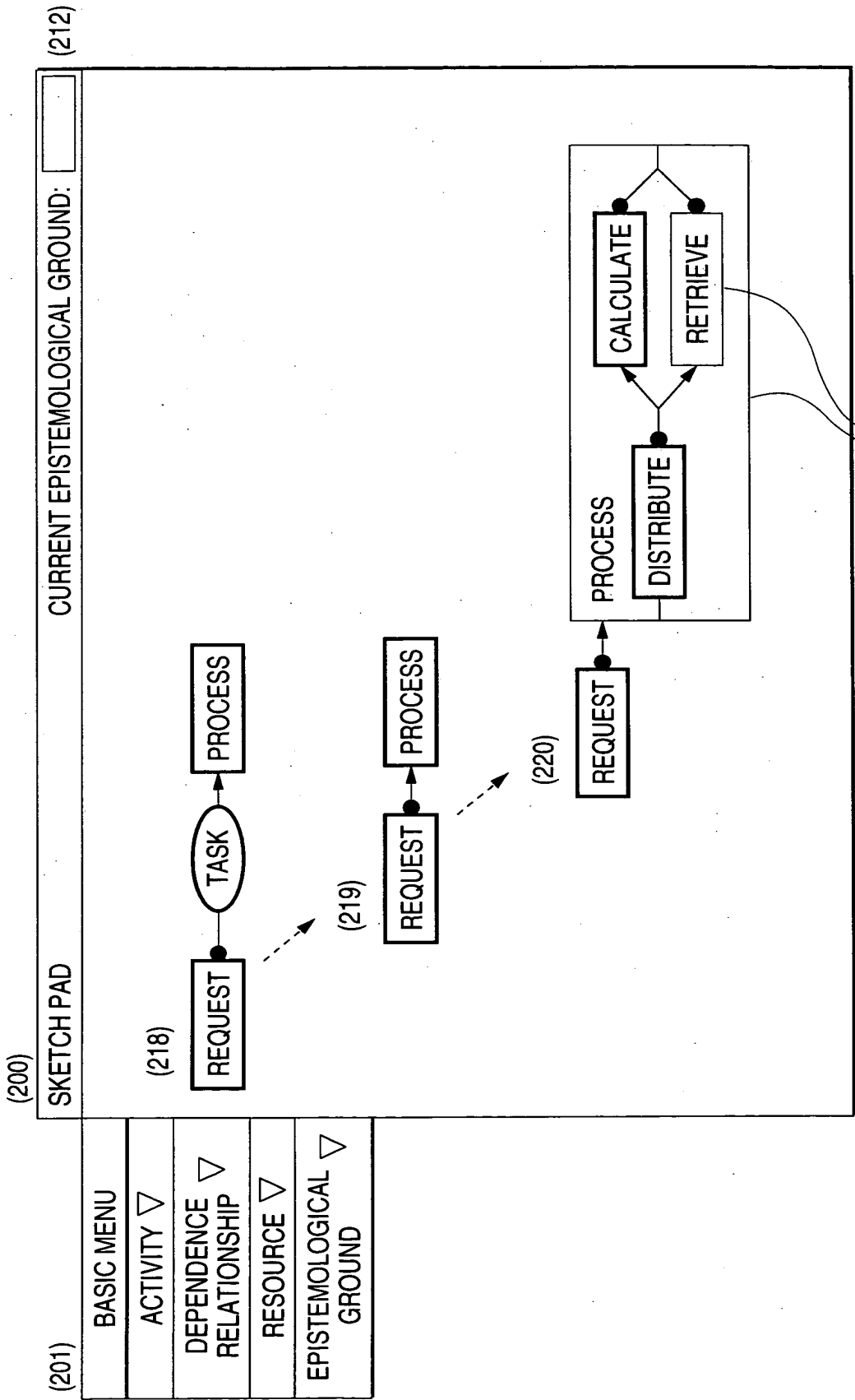


FIG. 25



UNFRAMED ACTIVITY MEANS THAT DETAILS ARE ALREADY DISPLAYED
OR THAT THE ACTIVITY CANNOT BE DIVIDED INTO MORE DETAIL

31/31

FIG. 26

